

FACT SHEET

This fact sheet is a companion document to the draft State Waste Discharge Permit No. ST 6049. The Department of Ecology (the Department) is proposing to issue this permit which will allow discharge of landfill leachate from the Rainbow Valley Landfill, Inc. (the Permittee) to the City of Raymond Wastewater Treatment Facility (the POTW).

This fact sheet explains the nature of the proposed discharge, the Department's decisions on limiting the pollutants in the wastewater, and the regulatory and technical basis for those decisions. Public involvement information is contained in Appendix A. Definitions are included in Appendix B. Acronyms and abbreviations are in Appendix C.

GENERAL INFORMATION

<u>Applicant:</u>	Rainbow Valley Landfill, Inc. Rt. 2 Box 300 C Raymond, Washington 98577
<u>Facility Name and Address:</u>	Rainbow Valley Landfill Highway 105 Raymond, Washington 98577
<u>Type of Facility:</u>	Landfill
<u>Discharge:</u>	City of Raymond Wastewater Treatment Facility
<u>Location:</u>	SR-105, Raymond, Washington 98577
<u>POTW Discharge:</u>	Willapa River Water Body ID Number: WA-22-0030 Latitude: 46° 41' 23" N Longitude: 123° 44' 42" W
<u>Issuing Agency:</u>	State of Washington Department of Ecology Southwest Regional Office PO Box 47775 Olympia, Washington 98504-7775

TABLE OF CONTENTS

	<u>Page</u>
Background Information.....	3
Description Of The Receiving Water.....	3
Description Of The Facility.....	3
Stormwater Collection System.....	3
Leachate Collection System.....	4
Leachate Pretreatment System.....	4
Ground Water And Surface Water Quality.....	4
Permit History.....	5
Permit Limitations And Conditions.....	6
Previous Permit Limitations.....	6
Wastewater Characterization.....	6
Regulatory Basis For Effluent Limitations.....	7
Proposed Permit Limitations.....	8
Monitoring And Reporting.....	8
General Conditions.....	12
Permit Modifications.....	12
Recommendation For Permit Issuance.....	13
References For The Text And Appendices.....	13
Review By The Permittee.....	14
Appendices.....	15-18
A -- Public Involvement Information	
B -- Definitions	
C -- Acronyms And Abbreviations	

BACKGROUND INFORMATION

DESCRIPTION OF THE RECEIVING WATER

The Rainbow Valley Landfill, Inc. (the Permittee) currently discharges a landfill leachate to the City of Raymond Wastewater Treatment Facility (the POTW), a secondary treatment plant. The discharge is authorized by an administrative order. The landfill leachate is treated by the POTW (Publicly Owned Treatment Works) and then discharged to the Willapa River, Raymond, Washington. The point of discharge is about 1,000 feet downstream of the confluence of the Willapa River with its "South Fork":

Latitude: 46° 41' 23" N

Longitude: 123° 44' 42" W

The water quality standards for this segment of the Willapa River, which has use classification "A," are set out in Chapter 173-201A of the Washington Administrative Code (WAC).

DESCRIPTION OF THE FACILITY

The Permittee is a closed landfill located five miles west of the City of Raymond, off of State Highway 105 in Pacific County, Washington. It is owned and operated by the Rainbow Valley Landfill, Inc. Larry Bale is the operator. The site of the landfill is quite remote and is located in an area of Pacific County in which the primary activities are logging and farming. There are no nearby residences. The Permittee began operation in 1980. It accepted municipal solid waste (both residential and commercial) generated throughout Pacific County as well as waste from several communities in northwestern Oregon. A very small percentage of the waste stream originated in Wahkiakum County. Woodwaste in small volumes was also disposed of at the landfill. No industrial waste was handled at the site. In 1991, the landfill was closed.

The actual size of the footprint on which solid waste is placed is approximately five to six acres and the landfill contains 300,000 tons of waste, according to Larry Bale. Willapa Bay and the mouth of the Willapa River are south from the landfill. Fleece Creek is located east of the site and flows from north to south into Willapa Bay. The mouth of Fleece Creek forms a marsh area located southeast of the landfill. Some tidal influence is observed in this marsh area. A tide gate, located at Highway 105, somewhat restricts the tidal influence north of the highway.

STORMWATER COLLECTION SYSTEM

The mean annual precipitation is between 80 and 90 inches; the 2, 10, and 100-year, 24-hour design storms are approximately 3.5, 4.5, and 6.3 inches respectively (DOE, 1992). The majority of rainfall occurs during the period of October through May. Precipitation falling on the landfill cap and areas adjacent to the landfill runs off to both the north and south directions. Existing stormwater detention ponds are located south and north of the landfill. Outfall from the north stormwater pond flows as intermittent runoff to Fleece Creek. Outfall from the south stormwater pond flows as intermittent runoff to the marsh area previously described. The Permittee has a stormwater general permit No. 1331 issued by Ecology.

FACT SHEET FOR STATE WASTE DISCHARGE PERMIT ST6049

LEACHATE COLLECTION SYSTEM

The landfill is located over a thick deposit of very low permeability clay. It does not have a bottom liner. As part of its operations the Permittee collects landfill leachate. The leachate collection system consists of a deep leachate collection trench and extraction well located on the south side of the landfill. There is no bottom leachate collection system. The leachate collection trench ranges from 8- to 26-feet deep with a 4-inch diameter perforated collection pipe. The trench is backfilled with 4-feet of washed rock and 3-feet of gravel. Leachate is pumped from the well to a 10,000 gallon aboveground storage tank and then into tanker trucks for disposal at the POTW.

A leachate blanket drain is located in the cover on the south side of the landfill and connects to the deep trench. The leachate blanket drain consists of a drainage layer between the low permeability soil liner and the underlying foundation material. The drainage layer consists of 12 inches of granular drainage material overlying a geotextile/geonet system.

An interim leachate collection trench, located at the toe of the north face of the landfill, intercepts leachate seeps. The trench is 6- to 8-feet deep and 60-feet long with a 4-inch perforated pipe connected to a corrugated metal pipe sump structure. Leachate is pumped from this system to an aboveground storage tank. Tanker trucks transport the leachate from the tank to the POTW (Sweet-Edwards/EMCON, 1991).

There are three holding tanks on the south side of the landfill. Each has 10,000 gallons capacity. Larry Bale estimates that another 30,000 gallons can be stored in the leachate collection system outside the tanks.

LEACHATE PRETREATMENT SYSTEM

The landfill does not have landfill leachate pretreatment system.

GROUND WATER AND SURFACE WATER QUALITY

In the testing period, 1985-1990, water quality standards for the following parameters were exceeded in the downgradient ground water monitoring wells:

Ammonia
Total Organic Carbon
Conductivity
Fecal Coliform
Manganese
Iron
Nitrate (Sweet-Edwards/EMCON, 1991)

In the same testing period, the surface water quality standards for the following parameters were exceeded in several Fleece Creek and marsh area sampling sites:

Un-ionized ammonia
Fecal Coliform (Sweet-Edwards/EMCON, 1991)

FACT SHEET FOR STATE WASTE DISCHARGE PERMIT ST6049

PERMIT HISTORY

On February 17, 1987, the Permittee submitted a NPDES/State Waste Discharge Permit application form to the Department. The application was for a discharge of landfill leachate to the headworks of the POTW. There is no record of the Department taking action on the application. RCW 90.48.200 states that an applicant shall be deemed to have a temporary permit in the event that the Department fails to act on the application within 60 days after it has been filed. Said permit shall authorize the applicant to discharge wastes as requested in its application only until such time as the Department shall have taken action upon said application.

In a January 1994 meeting with the Department, the Permittee proposed installation of a leachate treatment system. The Department found the proposed system inadequate to meet all water quality concerns.

On August 9, 1994, the Department served City of Raymond with an Administrative Order and Penalty Assessment for Violation of its NPDES permit terms and conditions including failure to reapply. In reaction to the Department enforcement action, the City of Raymond notified the Permittee that after November 1, 1994, they would no longer accept the landfill leachate.

On October 3, 1994, Ecology received the State Waste Discharge Permit application from the Permittee proposing to discharge landfill leachate to the City of Aberdeen Sewage Treatment Plant. The treatment plant is over 20 miles away from the landfill. An order authorizing such discharge was issued on October 25, 1994.

On October 7, 1994, the Department received the State Waste Discharge Permit application from the Permittee proposing to discharge landfill leachate to land. A letter requesting additional information was sent back to the Permittee on December 2, 1994.

On November 3, 1994, the Department received the State Waste Discharge Permit application from the Permittee proposing to discharge landfill leachate to the City of Raymond Sewage Treatment Facility. The treatment facility is only 5 miles away from the landfill. An order authorizing such discharge was issued on November 16, 1994.

PERMIT LIMITS AND CONDITIONS

PREVIOUS PERMIT LIMITATIONS

The Permittee's discharge to the City of Raymond Sewage Treatment Facility was covered under a temporary permit from April 18, 1987, through April 18, 1992. The temporary permit did not have any effluent limitations. It did not require submitting Discharge Monitoring Reports (DMRs) to the Department.

WASTEWATER CHARACTERIZATION

The application for state waste discharge permit to discharge landfill leachate to the City of Raymond Sewage Treatment Facility was submitted to Ecology on November 3, 1994, and accepted on November 16, 1994.

The proposed wastewater discharge was characterized for the following parameters:

<u>Parameter</u>	<u>Monitoring Results</u>
Flow	2,700 -- 50,000 gallons per day (gpd)
Temperature	12.9 -- 26.9 degrees Celsius
pH	5.63 -- 7.11 pH units
5-Day Biochemical Oxygen Demand (BOD ₅) (mg/l)	12 -- 166 milligrams per liter (mg/l)
Oil and Grease	Data not provided
Total Suspended Solids (TSS)	21 -- 75 mg/l
Conductance	1,580 -- 7,890 Units not provided
Chemical Oxygen Demand (COD)	31 -- 1,390 mg/l
Total Organic Carbon (TOC)	44 -- 400 mg/l
Ammonia	< 390 mg/l
Nitrate	< 7.4 mg/l
Nitrite	< 3.4 mg/l
Sulfate	< 153 mg/l
Chloride	304 -- 570 mg/l
Total Coliform	< 2,400 coliform colonies counted per 100 milliliters
Fecal Coliform	< 1,600 coliform colonies counted per 100 milliliters
Iron	12 -- 639 mg/l
Manganese	1.1 -- 6.1 mg/l
Zinc	0.03 -- 0.45 mg/l
Arsenic	< 0.009 mg/l
Cadmium	< 0.01 L mg/l Undetected
Chromium	< 0.08 mg/l
Lead	< 0.032 mg/l
Mercury	< 0.001 L mg/l Undetected

FACT SHEET FOR STATE WASTE DISCHARGE PERMIT ST6049

Detected Volatile Organics

<u>Parameter</u>	<u>Monitoring Results</u>
Chloroethane	< 5.5 micrograms per liter (mg/l)
Acetone	< 98 mg/l
Benzene	4.8 -- 5.7 mg/l
Toluene	1.4 -- 2.1 mg/l
Chlorobenzene	11 -- 18 mg/l
Ethylbenzene	36 -- 41 mg/l
Total Xylene	39 -- 54 mg/l
1,4-Dichlorobenzene	3.9 -- 4.6 mg/l

Detected Base-Neutral/Acid Extractables

<u>Parameter</u>	<u>Monitoring Results</u>
Naphthalene	< 52 mg/l
2-Methylnaphthalene	< 9 mg/l
Acenaphthylene	< 5.1 mg/l

REGULATORY BASIS FOR EFFLUENT LIMITATIONS

The Environmental Protection Agency (EPA) developed the General Pretreatment Regulations, 40 Code of Federal Regulations (CFR) Part 403, to implement the requirements of Section 402 of the amended Federal Water Pollution Control Act of 1972 (amended in 1977). The regulations establish responsibilities of federal, state, and local government, industry and the public to implement National Pretreatment Standards to control pollutants which may pass through or interfere with treatment processes in Publicly Owned Treatment Works (POTWs), or contaminate sewage sludge. POTWs are required to develop local pretreatment program or to develop and enforce specific effluent limits (local limits) for industrial users to ensure renewed or continued compliance with the POTWs' NPDES limits or sludge use, or disposal practices.

EPA has also established Categorical Standards for various types of industries. The Permittee is classified as solid waste facility with a Standard Industry Classification (SIC) number of 4953. EPA has not established Categorical Standards for solid waste facility at this time.

The City of Raymond Wastewater Treatment Facility was required by its NPDES waste discharge permit No. WA-002332-9 to establish local limits to regulate industrial discharges to its system. The permit was issued on June 28, 1991, and expired on December 21, 1993, but the local limits have not been developed. Without all the necessary information, Ecology is unable to establish permit limits at this time. However, Ecology adopts from the City of Raymond Ordinance Part 14.20.600 effluent limitations for temperature, oil and grease, pH, and BOD₅. The limits will remain in effect until the City of Raymond Wastewater

FACT SHEET FOR STATE WASTE DISCHARGE PERMIT ST6049

Treatment Facility establishes its own local limits, then the local limits will become automatically the permit limits and will have to be tested for monthly.

PROPOSED PERMIT LIMITATIONS

The City of Raymond Ordinance is the source of effluent limitations for temperature, oil and grease, pH, and BOD₅. Maximum daily flow measured so far is the flow effluent limitation. Those limitations are as follows:

<u>Parameter</u>	<u>Effluent Limitations</u>
Temperature	150 degrees Fahrenheit
Oil and Grease	100 mg/l
pH	5.5 -- 8.5 pH units
BOD ₅	300 mg/l
Flow	50,000 gpd

MONITORING AND REPORTING

Effluent monitoring, recording, and reporting are required (WAC 173-216-125) to verify that the effluent limitations are being achieved. In addition to monitoring effluent limits, the Permittee will be required to monitor all parameters that were found in the downgradient ground water monitoring wells and in Fleece Creek and marsh area sampling sites in concentration above water quality standards (Sweet-Edwards/EMCON, 1991). Those pollutants were also found in high concentrations in the landfill leachate. Furthermore, the Permittee will be required to monitor two remaining conventional pollutants: TSS and COD. The following is the list of all parameters scheduled to be monitored monthly in the sample taken from the truck before discharging the landfill leachate to the headworks of the City of Raymond Wastewater Treatment Facility:

Temperature
Oil and Grease
pH
BOD₅
Flow
Ammonia
Total Organic Carbon
Conductivity
Fecal Coliform
Manganese
Iron
Nitrate
TSS
COD

FACT SHEET FOR STATE WASTE DISCHARGE PERMIT ST6049

The permit will also require the Permittee to perform annual priority pollutant scan in the sample taken from the truck before discharging the landfill leachate to the headworks of the City of Raymond Wastewater Treatment Facility. The scan shall be done in August, the middle month of the dry season. The following is the list of priority pollutants according to 40 CFR Part 122 Appendix D:

ORGANIC TOXIC POLLUTANTS IN EACH OF FOUR FRACTIONS IN ANALYSIS BY GAS CHROMATOGRAPHY/MASS SPECTROSCOPY (GS/MS)

Volatiles

1V	acrolein
2V	acrylonitrile
3V	benzene
5V	bromoform
6V	carbon tetrachloride
7V	chlorobenzene
8V	chlorodibromomethane
9V	chloroethane
10V	2-chloroethylvinyl ether
11V	chloroform
12V	dichlorobromomethane
14V	1,1-dichloroethane
15V	1,2-dichloroethane
16V	1,1-dichloroethylene
17V	1,2-dichloropropane
18V	1,3-dichloropropylene
19V	ethylbenzene
20V	methyl bromide
21V	methyl chloride
22V	methylene chloride
23V	1,1,2,2-tetrachloroethane
24V	tetrachloroethylene
25V	toluene
26V	1,2-trans-dichloroethylene
27V	1,1,1-trichloroethane
28V	1,1,2-trichloroethane
29V	trichloroethylene
31V	vinyl chloride

Acid Compounds

1A	2-chlorophenol
2A	2,4-dichlorophenol
3A	2,4-dimethylphenol
4A	4,6-dinitro-o-cresol

FACT SHEET FOR STATE WASTE DISCHARGE PERMIT ST6049

5A	2,4-dinitrophenol
6A	2-nitrophenol
7A	4-nitrophenol
8A	p-chloro-m-cresol
9A	pentachlorophenol
10A	phenol
11A	2,4,6-trichlorophenol

Base/Neutral

1B	acenaphthene
2B	acenaphthylene
3B	anthracene
4B	benzidine
5B	benzo(a)anthracene
6B	benzo(a)pyrene
7B	3,4-benzofluoranthene
8B	benzo(ghi)perylene
9B	benzo(k)fluoranthene
10B	bis(2-chloroethoxy)methane
11B	bis(2-chloroethyl)ether
12B	bis(2-chloroisopropyl)ether
13B	bis(2-ethylhexyl)phthalate
14B	4-bromophenyl phenyl ether
15B	butylbenzyl phthalate
16B	2-chloronaphthalene
17B	4-chlorophenyl phenyl ether
18B	chrysene
19B	dibenzo(a,h)anthracene
20B	1,2-dichlorobenzene
21B	1,3-dichlorobenzene
22B	1,4-dichlorobenzene
23B	3,3'-dichlorobenzidine
24B	diethyl phthalate
25B	dimethyl phthalate
26B	di-n-butyl phthalate
27B	2,4-dinitrotoluene
28B	2,6-dinitrotoluene
29B	di-n-octyl phthalate
30B	1,2-diphenylhydrazine (as azobenzene)
31B	fluoranthene
32B	fluorene
33B	hexachlorobenzene
34B	hexachlorobutadiene
35B	hexachlorocyclopentadiene

FACT SHEET FOR STATE WASTE DISCHARGE PERMIT ST6049

36B	hexachloroethane
37B	indeno(1,2,3-cd)pyrene
38B	isophorone
39B	napthalene
40B	nitrobenzene
41B	N-nitrosodimethylamine
42B	N-nitrosodi-n-propylamine
43B	N-nitrosodiphenylamine
44B	phenanthrene
45B	pyrene
46B	1,2,4-trichlorobenzene

Pesticides

1P	aldrin
2P	alpha-BHC
3P	beta-BHC
4P	gamma-BHC
5P	delta-BHC
6P	chlordan
7P	4,4'-DDT
8P	4,4'-DDE
9P	4,4'-DDD
10P	dieldrin
11P	alpha-endosulfan
12P	beta-endosulfan
13P	endosulfan sulfate
14P	endrin
15P	endrin aldehyde
16P	heptachlor
17P	heptachlor epoxide
18P	PCB-1242
19P	PCB-1254
20P	PCB-1221
21P	PCB-1232
22P	PCB-1248
23P	PCB-1260
24P	PCB-1016
25P	toxaphene

OTHER TOXIC POLLUTANTS (METALS AND CYANIDE) AND TOTAL PHENOLS

Antimony, Total
Arsenic, Total
Beryllium, Total

FACT SHEET FOR STATE WASTE DISCHARGE PERMIT ST6049

Cadmium, Total
Chromium, Total
Copper, Total
Lead, Total
Mercury, Total
Nickel, Total
Selenium, Total
Silver, Total
Thallium, Total
Zinc, Total
Cyanide, Total

The data collected will be used to evaluate treatment requirements, if any, for this facility after local limits are developed.

The testing and monitoring schedules are detailed in the permit under Condition S.2 and S.3. Specified monitoring frequencies take into account the quantity and variability of the discharge, significance of pollutants, and cost of monitoring.

GENERAL CONDITIONS

General Conditions are based directly on state and federal law and regulations and have been standardized for all state waste discharge permits issued by the Department.

PERMIT MODIFICATIONS

The Department may modify this permit to impose numerical limitations, if necessary, to meet Water Quality Standards, Sediment Quality Standards, or Ground Water Standards, based on new information obtained from sources such as inspections, effluent monitoring, outfall studies, and effluent mixing studies.

The Department may also modify this permit as a result of new or amended state or federal regulations. The interim limits will remain in effect until the City of Raymond Wastewater Treatment Facility establishes its own local limits.

FACT SHEET FOR STATE WASTE DISCHARGE PERMIT ST6049

RECOMMENDATION FOR PERMIT ISSUANCE

This permit meets all statutory requirements for authorizing a wastewater discharge to a POTW. The Department proposes that this permit be issued for five (5) years.

REFERENCES FOR THE TEXT AND APPENDICES

Environmental Protection Agency (EPA)

1991. Technical Support Document for Water Quality-based Toxics Control. EPA/505/2-90-001.

Sweet-Edwards/EMCON, Inc.

1991. Closure/Post-Closure Plan, The Landfill, Raymond, Washington. Bothell, Washington 98011. Project S32-01.04.

Washington State Department of Ecology (DOE)

1992. Stormwater Management Manual for the Puget Sound Basin; (The Technical Manual. 91-75.

FACT SHEET FOR STATE WASTE DISCHARGE PERMIT ST6049

REVIEW BY THE PERMITTEE

A proposed permit and fact sheet were reviewed by the Permittee for verification of facts. No factual items were corrected in the draft permit and fact sheet.

FACT SHEET FOR STATE WASTE DISCHARGE PERMIT ST6049

APPENDIX A--PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to issue a state waste discharge permit to the applicant listed on page one. The permit contains conditions and effluent limitations which are described in the preceding pages of this fact sheet.

An announcement of Tentative Determination for a State Waste Discharge Permit to Discharge to POTW and the announcement of Public Comment and Information were published on (January 4, 1995) in Willapa Harbor Herald to inform the public that an application had been submitted and to invite comment on the reissuance of this permit.

The Department will publish a Public Notice of Draft (PNOD) on (April 17, 1995) in Willapa Harbor Herald to inform the public that a draft permit and fact sheet are available for review. Interested persons are invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below:

Water Quality Permit Coordinator
Department of Ecology
Southwest Regional Office
310 Desmond Drive
Lacey, WA 98503

Written comments should be mailed to:

Water Quality Permit Coordinator
Department of Ecology
Southwest Regional Office
PO Box 47775
Olympia, WA 98504-7775

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the 30-day comment period to the address above. The request for a hearing shall indicate the interest of the party and reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-220-090). Public notice regarding any hearing will be circulated at least 30 days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing, WAC 173-216-100.

The Department will consider all comments received within 30 days from the date of public notice of draft permit, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by telephone, (360) 407-6280, or by writing to the address listed above.

FACT SHEET FOR STATE WASTE DISCHARGE PERMIT ST6049

APPENDIX B--DEFINITIONS

Ambient Water Quality--The existing environmental condition of the water in a receiving water body.

Ammonia--Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

BOD₅--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD₅ is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Class 1 Inspection--A walk-through inspection of a facility that includes a visual inspection and some examination of facility records. It may also include a review of the facility's record of environmental compliance.

Class 2 Inspection--A walk-through inspection of a facility that includes the elements of a Class 1 Inspection plus sampling and testing of wastewaters. It may also include a review of the facility's record of environmental compliance.

Fecal Coliform Bacteria--Fecal coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. The presence of high numbers of fecal coliform bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces.

National Pollutant Discharge Elimination System (NPDES)--The NPDES (Section 402 of the Clean Water Act) is the Federal wastewater permitting system for discharges to navigable waters of the United States. Many states, including the State of Washington, have been delegated the authority to issue these permits. NPDES permits issued by Washington State permit writers are joint NPDES/State permits issued under both State and Federal laws.

pH--The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

Technology-based Effluent Limit--A permit limit that is based on the ability of a treatment method to reduce the pollutant.

FACT SHEET FOR STATE WASTE DISCHARGE PERMIT ST6049

Total Suspended Solids (TSS)--Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

Water Quality-based Effluent Limit--A limit on the concentration of an effluent parameter that is intended to prevent the concentration of that parameter from exceeding its water quality criterion after it is discharged into a receiving water.

APPENDIX C -- ACRONYMS AND ABBREVIATIONS

ACRONYMS

BOD₅ -- Determining the Biochemical Oxygen Demand
CFR -- Code of Federal Regulations
COD -- Chemical Oxygen Demand
DMRs -- Discharge Monitoring Reports
DOE -- Department of Ecology
EPA -- Environmental Protection Agency
FWPCA -- Federal Water Pollution Control Act
GS/MS -- Gas Chromatography/Mass Spectroscopy
NPDES -- National Pollutant Discharge Elimination System
PNOA -- Public Notice Of Application
PNOD -- Public Notice Of Draft
POTW -- Publicly Owned Treatment Works
RCW -- Revised Code of Washington
SIC -- Standard Industry Classification
TSS -- Total Suspended Solids
TOC -- Total Organic Carbon
WAC -- Washington Administrative Code

ABBREVIATIONS

L -- limit (detection limit)
mg/l -- milligrams per liter
µg/l -- micrograms per liter